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St. Bartholomew's Hospital Journal,

MARCH 14th, 1899.

"Æquam memento rebus in arduis
Servare mentem."—*Horace,* Book ii, Ode iii.

A WALK through the streets in the neighbourhood of Cavendish Square is likely to produce in the minds of the uninitiated a somewhat erroneous impression. The number of trim houses with brightly-polished door-plates would probably convey an exaggerated notion of the amount of consulting practice carried on in London. In former days, when the appointments in the medical schools were but few, when medical education was largely unorganised, or carried on by private enterprise, there were fewer inducements for men to stop in town than exist to-day. The increasing complexity of the training of the student has led to the creation of many appointments, which are regarded as "stepping-stones." But at the same time by this very system the average general practitioner is sent out so much better equipped, that he does not need to rely on the consultant's aid so frequently.

The supply has increased while the demand has rather diminished. By the energy and ability exerted on his teaching, the general practitioner is enabled to cope with more difficult cases, and is apt to call in the consultant to back up his opinion as well as in the expectation of receiving valuable assistance. This is hardly the type of case out of which the latter can gain much reputation.

It may of course be urged that there is so much more operative surgery done to-day than formerly that here, at least, the demand has largely increased. This is true, but now that every provincial town of any size has at least one F.R.C.S., probably many of the operations which would have been performed in town are now done in the country. It is true, however, that a man will often call in a surgeon to do an operation which he is quite competent to undertake himself, simply to safeguard his reputation. There is a risk in every operative procedure; if he does it himself, should anything go wrong the patient's friends will say at once, "Why was a 'specialist' not called in;" whereas, if the same mishap occurs to the surgeon they say, "Well, at any rate, we did the best we could." So much virtue is there in the environment of Cavendish Square.

We are led to the conclusion, then, that surgery offers a better opening in town than medicine. A young man can obtain surgical work by assisting a senior, or by performing operations for a lower fee. In medicine, on the other hand, these chances do not occur. Another factor may be pointed out. The surgeon does not suffer from the competition of the quack to the extent that the physician does. We certainly have heard of a quack who would tell a patient that one of his kidneys was diseased, and offer to do a nephrectomy. He then made a skin incision under an anæsthetic, stitched up the wound, and presented the patient with a sheep's kidney which he professed was the one he had removed. He did not fail to compare his statistics with those of others who performed nephrectomy! This may be mythical, it must certainly be rare. The results of surgery are patent, and can be understanded of the people.

The physician, on the other hand, is at a disadvantage with the quack who says that he has wrought marvellous cures. The diagnosis was as much the quack's as the cure. If he states he has exorcised Bright's disease, or healed a cavity in the lungs, who shall gainsay him? Such methods are scarcely applicable to a strangulated hernia or severe hæmorrhage.

Clinical Lecture on a Case of Ingravescent Coma.

By Dr. GEE.

Reported by T. J. HORDER, M.B., M.R.C.P.Lond.

GENTLEMEN,—The case I wish to draw your attention to this morning is that of Robert H—, 58 years old, admitted to the hospital this month. I wish you to note his age, because he suffered from a disease of old age. When he was admitted, Mr. Thursfield's note says: "He was quite conscious, but his speech was quite unintelligible, and he appeared to be talking nonsense. He had distinct weakness and loss of power in the right arm and leg, but no loss of power in the face or tongue. He understood perfectly what was said to him, and obeyed directions, but mumbled nonsense if he tried to speak." That was his condition, and I would draw your attention to three points: (1) the loss of power in the right arm and right leg; (2) the inability to speak, not due to any defect of intelligence, nor to delirium, nor to unconsciousness,—there is no doubt he was aphasic, using the wrong words, and making mistakes in them. He had, therefore, right hemiplegia and aphasia, but (3) was not unconscious. That triad of symptoms—right hemiplegia, aphasia, retention of consciousness—is usually indicative of some obstruction of the middle cerebral artery on the left side, producing immediately anæmia of the brain in this region, and going on to softening of the parts around. Being speechless the man was quite unable to tell how his disease came on, but he was seen to fall on a railway platform while standing. It therefore came on suddenly, and a hemiplegia coming on suddenly would cause him to fall. I ought to have added to the "triad," sudden onset in a state of health. Of course, he *may* have lost consciousness, but it had returned on coming to the hospital.

If I had seen him on admission I should have diagnosed obstruction of the middle cerebral artery. A systolic murmur, which he had at the apex of the heart, would have confirmed this opinion, suggesting mitral regurgitation, chronic endocarditis, and a possible source of embolism.

If a person suddenly falls like this it may be due to sudden paralysis occurring, or to sudden loss of consciousness — epileptic, apoplectic, or syncopal,—or to sudden giddiness, as auditory vertigo.

Now for the course of this man's complaint. "He was put in the surgery ward, and during the night he became more unconscious, and the hemiplegia more marked. He was sick, and passed urine unconsciously. His pupils were small, but not pin-point, and both reacted to light, the right less readily than the left. He was sick many times on the second and third days of his admission. He was very fat. His pulse was 88, the artery hard, tortuous, and thickened. The heart's apex-beat was in the nipple line," and there was the systolic murmur noted above. "The lungs gave signs of much bronchitis. The bowels were open freely on the third day. The urine had sp. gr. 1022, was acid, and contained no albumin nor sugar." Then I saw him, on the third day of his disease, and the notes I then made were: "Right hemiplegia," obviously affecting not only the limbs but also the face and tongue, which pointed strongly to the right. He seemed to me to have a lateral deviation of the face to the left, not highly marked. He had no deviation of the eyes to the left. These deviations are easily understood if you remember they are the result of paralysis of movements on the right side of the body; the left side of the tongue pushed the organ to the right; if the movements of the face to the right are paralysed, the muscles on the left side draw the face to the left; so for conjugate deviation of the eyes, the unparalysed muscles drag the eyes to the left. He had all these evidences of paralysis of the right side of the body. "Aphasia:" one hesitated a little because his articulation was very defective. The two things often go together, but if the articulation be bad a patient may be talking perfect sense, you cannot be sure. But the defective articulation would be, again, due to paralysis. Still, at this time I believed he had aphasia, and when his articulation got better this was confirmed. "Coma incomplete but increasing:" the gradually diminishing consciousness was a very important point. "Rather frequent vomiting." The other conditions were "obesity; systolic apex murmur; arterial changes; no albumin in urine; ophthalmoscope, nothing abnormal."

The symptoms were therefore now added to and altered; right hemiplegia, aphasia, increasing coma. And at this time the important point was this ingravescent coma or ingravescent apoplexy. On account of this symptom,—this was the first time I saw him,—my opinion was that he had a hæmorrhage into the brain, for there is no more characteristic symptom of hæmorrhage into the brain than increasing coma coming on after bad headache, or vomiting, or paralysis, or all three. The time may be very short, half an hour or (as here) a day or two. If on these symptoms coma supervenes, coma stealing on the patient and getting deeper and deeper, there is no more characteristic symptom of hæmorrhage into the brain. Here the coma was late in coming on; the disease often

progresses much more rapidly; for instance, there is violent headache, or vomiting, then drowsiness in half an hour, and in an hour deep coma. But the sequence is just the same. Sometimes there is no hemiplegia at all, only pain in the head and vomiting; the patient may think himself quite well,—he is "subject to that sort of thing." To repeat; this ingravescent coma in a patient who was just before the subject of hemiplegia, vomiting, or headache,—nothing is more characteristic of hæmorrhage into the brain.

Just a word as to the most frequent seat of the hæmorrhage in these cases. It occurs in the same region as the softening I spoke of just now. But the branches of the middle cerebral artery which most usually give rise to the bleeding are the lenticulo-striate branches, supplying the anterior part of the internal capsule, and the lenticular nucleus; and one artery in particular, supplying the putamen or most external part of this lenticular nucleus, from its being so often affected, is called the artery of cerebral hæmorrhage. The hæmorrhage, more frequently than anywhere else, takes place into the anterior part of this putamen, or between it and the claustrum. Supposing a hæmorrhage to occur here, and go on and on, it does not require much bleeding to compress the internal capsule, especially its posterior part, so producing hemiplegia.

So much for the site of the hæmorrhage. Now for the other symptoms—heart, kidneys, &c. In a very large number of post-mortems we find contracting granular kidneys, and in at least two thirds or more there is considerable hypertrophy of the left ventricle—something, that is, of which there can be no doubt. Then arterial changes are found; atheroma, or peri-arteritis (arterio-sclerosis, arterio-capillary fibrosis) is a very frequent change. It is this change, probably, which accounts for the hypertrophy of the heart, this latter being secondary to the arterio-sclerosis, which is essentially of the same nature as the change taking place in the kidneys. Do not run away with the notion that we always find these changes, for we do not; there may be hypertrophy of the heart without granular kidneys, and *vice versâ*. What evidence had we of these changes in this patient? None at all. The urine had a good specific gravity and no albumin; it is not probable either that it contained any casts. So there was no evidence, so far, of granular kidneys. Nor was there any evidence of hypertrophy of the heart; there was no heaving impulse, though, being so fat, he *may* have had this condition. The arteries certainly felt a little rigid, but there was not much change in them.

Hitherto nothing was known of the patient's past history; we had to judge of the patient as we saw him. Soon afterwards, however, the friends came, and we were able to find out more. We learnt that he had had "many 'similar' attacks, the first about three years ago. He has had as many as three 'fits,' occurring in rapid succession, unconsciousness, foaming at the mouth, and struggling,"—all characters of epileptic fits. "In the last of these, which occurred in September, 1898, he was found in the morning speechless, and remained so for several days; he had at that time, so far as can be ascertained, no hemiplegia. Since then he has been forgetful, and in some respects childish, but lately has appeared to be in excellent health. He had 'gout' a year ago."

This history looks like that of epilepsy, and no doubt it was. After the September fit there was no hemiplegia, but there was aphasia,—for several days. That is very common after epilepsy; the patient may be left aphasic or hemiplegic one, two, or three days; then the paralysis and aphasia disappear. If, therefore, we had known on admission all this, I should have hesitated to say the man was suffering from arterial obstruction, but should have thought him more likely to be epileptic. If so, the hemiplegia would disappear in two or three days. So with this history we should have taken a third view, though not when I saw him, because then there was the increasing coma. Epileptic coma comes on *instantly*, and is the first evidence of the disease. An ingravescent coma is no part of epilepsy. But this epilepsy is interesting because we naturally ask the question *why* the man became suddenly epileptic at fifty-five. The most likely explanation is diseased kidneys, though the urine did not show it; that is, the attacks were uræmic. Many people have terribly granular kidneys, yet no examination of the urine may show it. So I think a very likely explanation of these attacks is that they were uræmic. That last attack, I think, was much more likely to be due to arterial changes, culminating in the cerebral hæmorrhage, the portion of brain involved being impaired by those changes. Those changes, I did not mention, were the production of aneurysms, miliary or larger, so that I have no doubt whatever that he had a cerebral hæmorrhage connected with granular kidneys.

A few words as to the subsequent course of the case. The patient never became quite conscious, and on January 8th "the temperature began to rise, his breathing became much more rapid and laboured, and he developed a distressing and ineffectual cough;" this was on the morning of January 9th, the eighth day of the disease. When cases of cerebral hæmorrhage die, they always die in that way, not till the vital functions fail—circulation, respiration, and animal heat. This man's temperature began to rise,—always a bad sign in these cases—his respirations became more rapid and laboured, and he developed a bad cough, and his pulse rose. In cerebral hæmorrhage you always get congestion of all the internal viscera, and this explains the great liability of these patients to bronchitis. They may die almost more from their bronchitis than from anything. A friend of mine who has devoted a lifetime to the study of nervous diseases tells me he could diagnose a case of cerebral hæmorrhage by looking at the lungs, this

congested condition is so characteristic a feature. The note continues: "On the evening of January 9th he became quite suddenly very much worse, his pulse failing, and becoming almost imperceptible; at 1 a.m. he was quite unconscious, his respirations very shallow and rattling, and he died quietly about 4.30 a.m. on January 10th." I think something fresh had occurred,—rupture of the blood into the lateral ventricle, producing the sudden unconsciousness, and so putting an end to his life. Ventricular hæmorrhage often occurs much earlier than in him, and then instead of a few days the patient dies in a few hours.

Dentistry for Medical Men.

By R. C. ACKLAND, M.R.C.S., L.R.C.P., Assistant Dental Surgeon to the Hospital.

III. PAIN FOLLOWING THE EXTRACTION OF TEETH.

MORE or less pain from osteitis often follows the extraction of a tooth, however skilfully performed the operation may have been. To relieve this various remedies are in use; one of the following will generally be found effective.

Immediate pain will often yield to a solution of cocaine, 1 in 10 to 1 in 20, used on a pledget of cotton wool, and inserted into the socket as a plug. Hot carbolic and water, 1 in 40 to 1 in 60, held in the mouth is often effective in the place of the foregoing. A tampon of cotton wool soaked in the tincture of opium, or in camphorated phenol, will tend to relieve the pain. Two special preparations in use are the following:

1. A solution made up as follows:

℞ Chloroform,
Alcohol,
Tincture of aconite āā ... 100 parts.
Morphine ... ... 1 part.
Mix.

2. An unguentum made up of—

℞ Menthol ... ... 45 grs.
Coc. Hyd. ... ... 20 „
Chlor. hydrat. ... ... 10 „
Vaseline ... ... 35 „

Both are used on a piece of cotton wool, and are lightly inserted into the wound.

The latter of the two, the ointment, the writer has rarely found fail. Its effect is more lasting, the vaseline serving as a vehicle for the medicaments, which prevents their being put into solution by the saliva, the flow of which at such a time is often very copious. It can also be smeared on the surrounding gum.

Persistent pain is more common when periodontitis or periostitis has been the reason for the extraction, the cause of this being the necessary bruising of the already inflamed socket, which tends for the time rather to aggravate than to relieve the inflammation. This is more likely to happen when much injury has been done to the alveolar bone.

When the patient is weakly or diseased, or should the extraction have necessitated a more than usual amount of laceration, sloughing of the gum and small exfoliations of bone may take place. This latter result is, no doubt, partially due to the fact that the recuperative power of the bone is small.

The above troubles are more apt to follow the extraction of a lower tooth because of *débris* of food, &c., more readily lodging in the wound. This is more especially the case when the tooth extracted is the second or third molar. The lower wisdom-tooth's socket is particularly apt to cause persistent pain, first of all because it cannot be so readily cleansed, and secondly, the extraction of this tooth often needs so very much force.

Of local treatments, poppy-head fomentation, made by boiling two ounces of poppy-heads in a pint of water until it has evaporated down to about half a pint in volume, is a time-honoured remedy. The hot liquid, obtained by straining off, should be held in the mouth; on no account should fomentations or poultices be put on the outside, as the result may be most disfiguring. A hot solution of carbolic acid in water—strength 1 in 40 to 1 in 60—syringed frequently and somewhat forcibly into the cavity seems to serve as well. A most effective result may be also obtained with a very hot solution of chloroform dissolved in spirit and water. This can be either syringed into the cavity or held in the mouth on the affected side.

When relief has been obtained by one of the foregoing remedies, further treatment should consist in keeping the wound as clean as possible by using an antiseptic mouth-wash of Condy's Fluid, carbolic acid and water 1 in 40 to 1 in 60, &c. Plugging the wound, except for a short time, such as to relieve the immediate pain of a severe extraction, should not be resorted to, as it impedes and may altogether prevent necessary drainage. Whenever it has been found necessary to use a plug of any kind, care should be taken to see it removed when its purpose is served.

Recourse may be had to internal treatment with such drugs as butyl chloral hydrate, phenacetin, antikamnia, or one of the preparations of opium.

When severe suppuration follows the extraction, or should the extraction have been necessitated for a patient who is otherwise weakly, small exfoliations with more or less persistent pain may take place during weeks, in which case little can be done except to frequently syringe the wound and to remove the pieces of bone as they loosen. Butyl chloral hydrate, in the form of five-grain cachets, will be found to be a very great sedative in such cases, when treating the pain which often accompanies the separation of each piece of bone.

The Muscle-spindle.

A Paper read before the Abernethian Society on November 24th, 1898,

By F. E. BATTEN, M.D.Cantab., M.R.C.P., Assistant Physician to the Hospital for Sick Children, Great Ormond Street, and Pathologist to the National Hospital for Paralysis and Epilepsy, Queen Square.

I FEEL that I owe an apology to the Society for introducing a subject so remote from the usual practical papers which are read before this Society, but my excuse must be that it is a subject which has considerably interested me, and it is with the hope that you also will take some interest in it that I venture to bring it before you this evening. I cannot but believe that it will in the future have considerable bearing upon the pathology of certain diseases of which at present we know comparatively very little. The importance of the organs I am about to describe has only recently been recognised, and chiefly through the work of Sherrington, and little has he done from the pathological point of view.

Before, however, commencing the description of the muscle-spindle I wish to describe to you a simple method suggested by Sihler, by which the muscle-spindle can be teased out and minutely examined. The muscle, after removal from the body, is divided in a direction parallel to its fibres into pieces about the size of an ordinary lead pencil, and these are placed to soak in solution No. 1:

No. 1.—Acetic acid ... ... 1 part.
Glycerine ... ... 1 „
Chloral hydrate solution, 1 per cent., in distilled water... ... ... 6 parts.

After having been in this solution for twenty-four hours, the tissue becomes very much swollen up, and it is now removed and again further divided into pieces about the size of a 3—4 catheter; the tissue is again put into this solution for another twenty-four hours, after which the fluid is strained off and the tissue covered with pure glycerine, in which it is allowed to soak for twenty-four hours; from this it is removed and placed into solution No. 2 for ten to twelve days.

No. 2.—Ehrlich's hæmatoxylin ... ... 1 part.
Glycerine ... ... 1 „
Chloral hydrate sol., 1 per cent., in distilled water ... ... 6 parts.

After it is well stained it is again placed into pure glycerine, where it can remain indefinitely.

Small pieces of muscle are now taken and squeezed between two glass slides, and on holding the slide against the light the spindle can readily be seen stained dark blue in contrast to the surrounding red coloured muscle-fibre. The further teasing of the muscle-spindle is most readily performed by removing the upper slide and placing a coverslip over one end of the spindle, and stroking the spindle with the flat of the needle; all the surrounding muscle-fibre is thus removed, leaving the spindle isolated. It should be remembered that the nerves and vessels are also stained blue by this method, and it is not always easy to distinguish by the naked eye between a muscle-spindle and a vessel; under the low power of the microscope the question is easily settled, however. When the spindle is fully teased out it can either be mounted without further staining, in which case it is again pressed between two glass slides, and placed into a bowl of methylated spirit and allowed to harden for twenty-four hours; it is then placed into absolute alcohol, cleared in xylol, and mounted in Canada balsam; or, if it is desired to examine the spindle by other methods, it is placed into Müller's fluid till all the colour is discharged, and it may then be examined by any method desirable, and cut either in longitudinal or in transverse section. The spindle may be imbedded either in wax or celloidin; the former certainly has an advantage for serial sections in transverse direction, although for most purposes I think celloidin is preferable.

History.—I do not propose to enter into any detailed account of the various authors who have added to our knowledge of the muscle-spindle, but merely to give a brief record of those who have made notable advance in the subject.

In the year 1862 Kölliker first described the spindle in the muscle of the frog, and considered that they were muscle-fibres undergoing development, and to this view he adheres in his *Pathology* published in 1889, after he had studied them in rabbits and in man. In the same year Kühne added considerably to the description given by Kölliker, and introduced the name "muscle-spindle." He also regarded them as a stage in the development of muscle. Then followed a series of authors who regarded them as a pathological condition occurring in atrophied muscle, and even as late as 1890 one author still regards them as pathological. In 1888 Kerschner argued the sensory nature of the muscle-spindle, and suggested that their function might be connected with the sense of position. In the same year Cattaneo proved experimentally that the muscle-tendon organs of Golgi were connected with the posterior nerve-roots, but curiously enough he considers the muscle-spindle to be muscle in the course of development, following the view of Kölliker. In 1893 Ruffini first demonstrated the annulo-spiral nerve termination within the spindle, but it remained for Sherrington in 1894 to prove that the nerve-fibre of the spindle passes up in the posterior roots, and definitely to settle their sensory function.

The question may well be asked, what is the muscle-spindle? And in reply I would say it is a spindle-shaped body occurring in skeletal muscles, abundantly supplied with nerve-fibres, which can be traced into the posterior roots, and from which afferent impulses probably arise; or to put the answer more shortly, though possibly more incorrectly, it is the sensory nerve termination within the muscle.

The next question that may well be asked is, what proof is there of its sensory nature? And in reply to the question I would divide my answer into the following headings:

1. Physiological.
   (*a*) Indirect, *i.e.* deductions.
      (1) The abundant nerve-supply far above the number of muscle-fibres.
      (2) The character of the sheath, resembling that of other sensory end-organs.
      (3) The nature of the nerve termination, *i.e.* a nerve-fibre wound in a spiral round the muscle-fibre.
   (*b*) Direct.
      (1) The fact that after section of the anterior nerve-roots the corresponding muscle atrophies, leaving the spindle unaltered and the nerve intact.
2. Pathological.
      (1) The fact that in acute and chronic disease of the cells of the anterior horn of the spinal cord, the muscle atrophies, leaving the muscle-spindle and its nerve-supply intact. This has been shown to be the case in progressive muscular atrophy, and in infantile paralysis.
      (2) Although not definitely proved, it has been shown that certain changes occur within the spindle in the case of tabes dorsalis in man.

Function of the muscle-spindle.—Having therefore determined that the spindle is sensory in function, the question arises whether it can give rise to more than one form of sensation, and here one passes from the sure position of fact to the doubtful ground of theory.

We know that from muscle more than one form of sensation arises. Are all these served by one and the same terminal organ and nerve? There are within the spindle, nerves of most varying calibre, those supplying the equatorial region being of very large size, those supplying the pole being of smaller size, and the number of these nerves is enormous. Ruffini has shown in the cat that there are three forms of nerve termination within the spindle, none of which does he considers to be motor. I think, however, in spite of his recent assertion to the contrary, that it is not improbable that there is a motor termination within the spindle, though I myself have never been able definitely to prove it.

I think it therefore not improbable that the various forms of sensation are represented by various forms of nerve termination, although it has not yet been proved that such is the case.

DESCRIPTION OF THE MUSCLE-SPINDLES.

Distribution.—Muscle-spindles have been found in nearly all muscles of the body, but they are by no means evenly distributed. They are certainly numerous in the small muscles of the hand and in the biceps of the arm (the latter muscle I have used more often than any other one muscle). Forster states that they are frequent in the extrinsic muscle of the larynx. I have been unable to find them in the muscles of the eye, the extrinsic muscles of the tongue, or in the diaphragm; but my examination of these muscles has been by no means exhaustive. The above statement agrees with that of

other authors—Fraenkel, Millbacher, Kerschner, and Sherrington,—but with regard to the eye is at variance with the statement of Siemerling, who has described a spindle in an atrophied inferior rectus muscle of the eye; and, in regard to the tongue, is at variance with a statement of Forster's that they are to be found in the hinder part of the tongue.

Further, the muscle-spindles are more frequent in the belly of the muscle than near the tendon; but in relation to this statement it would seem to me that we should recognise in the muscle-spindle, in the musculo-tendon organ, and in the tendon organ, the gradual transition from the one organ into the other, and I would regard them not as distinct organs, but as variations of the same organs adapting themselves to the tissue in which they are situated, and in all probability serving the same function.

Age.—Muscle-spindles occur at all ages, from the fourth month of fœtal life onwards; this has been shown by Felix, Siemerling, and Christomanos and Strössner.

Size.—The size of a muscle-spindle varies considerably. One of the longest simple spindles I have found measured 11·7 mm., and the maximum breadth ·5 mm.; but an average size is from 2 mm. to 4 mm. in length, and ·15 mm. to ·4 mm. in breadth. It would seem to me that the size varies both with regard to age and to the length of the muscle, being longer in the adult than in the child, and in the longer muscles.

Frequency.—I have made no attempt to estimate the number of spindles in any given muscle, but an estimate has been made by Felix, who found seventy-nine in one biceps. They are, however, much more easily found in wasted muscle than in well-developed muscle, and more easily in the muscle of a child than in that of an adult; hence the muscle of a child dying of a wasting disease is a muscle in which it is easy to demonstrate the muscle-spindle.

Description.—The muscle-spindle is, as its name implies, spindle in shape, varying considerably in size. It is common to find several spindles in one plane of the muscles, and they are often found along the course of a nerve from which they receive their supply, and lie parallel to it. Spindles are sometimes found compounded of two simple spindles, but I have no teased specimen of more than two so compounded. Sherrington, however, describes a triple spindle, and Kerschner a quadruple. On the other hand, it is not uncommon to find one spindle joined at its end with another spindle, and that again may be joined to another; three in a row is the maximum number that I have found. In such a case each spindle receives its own nerve supply.

The relation which the muscle-spindle bears in position to the muscle-fibre also varies. Firstly, the muscle-spindle may lie wholly in muscular tissue, the muscle-fibre passing in at one end, and, after passing through the spindle, passing out at the other. Secondly, the spindle may lie partly in muscular tissue and partly in connective tissue. Thirdly, the muscle-spindle may lie wholly in the connective tissue, the contained muscle-fibre being independent of external muscle-fibres.

The essential portions of a muscle-spindle are—(1) the muscle-fibres, (2) the nerves and nerve-endings, (3) the sheath, (4) the blood-vessels, (5) the lymphatics and lymph spaces, (6) septa dividing the spindles into compartments.

The various parts will now be described in the above order.

The muscle-fibre.—One or more muscle-fibres enter one pole of a spindle; these fibres are smaller than the ordinary muscle-fibres, being about ·02 mm. in diameter (the average extra-fusal fibre measuring about ·06 mm.). The muscle-fibres are well striated, and their striation is generally slightly coarser than the extra-fusal fibres, ten striations occupying the same space as thirteen striations of the extra-fusal fibres. As the muscle-fibre or fibres pass towards the equatorial region of the spindle they become divided into many smaller fibres, some of these measuring only ·008 mm. At a certain point the muscle-fibre appears to lose its striation, and nuclei appear in the substance of the muscle-fibres. These nuclei gradually increase in number till they completely fill the muscle-fibre; then, after a short distance, they again become less numerous, and the muscle-fibre again resumes its striation. The nuclei are rounded, have a diameter of about ·006 mm., they stain well with hæmatoxylin, and generally occur about the equatorial region of the spindle.

In the equatorial region of the spindle the muscle-fibres usually lie to one side, as they do not completely fill the space, whereas at the proximal and distal ends the sheath closely envelops the muscle-fibres. The muscle-fibres, after passing through these changes in the equatorial region of the spindle, pass to the distal end, where they become joined again and pass out of the spindle. I do not believe that all fibres become so nucleated, for I have seen muscle-fibres pass through a spindle without losing their striation at any point. The number of muscle-fibres in a spindle varies according to the different regions seen in section.

Nerves and nerve-endings.—The nerve-supply is always abundant; as a rule, at least two nerves pass to a muscle-spindle, the one at the equatorial region, the other at the proximal or distal end. It is not uncommon, however, to find four nerves entering a spindle at various points, two or more arising from a common nerve-trunk.

The largest nerve-bundle usually enters the spindle at the equatorial region, and contains two or three fibres, the largest measuring ·008 mm. The nerve-bundles which enter toward the distal and proximal ends are generally composed of finer fibres, and sometimes of only a single fibre, having a diameter of ·004 mm. or less.

The nerve-terminations within the spindle have been described by Ruffini in the cat as of three varieties—the annulo-spiral, the flower-ending, and the plate-ending. In dogs the annulo-spiral termination is distinct, and the same is present in man, although one is unable to get the same regular contour to the spiral that one obtains in the dog. At the point where the spiral nerve-fibre winds round the muscle-fibre, there are numerous nuclei in its substance, those at either extremity tail off into a single row, whilst in the centre they form several rows, and completely interrupt the striation of the muscle-fibre. The exact nature of the other forms of nerve-termination I have been unable to define; one can trace the fine filament to the muscle, where they appear to lose themselves without any definite termination.

With regard to the number of nerve-fibres within a spindle, one may see at times eight to ten in section. As a rule they are more numerous in the equatorial region than at the distal or proximal ends, but they are abundant in both situations.

Nerve-sheath.—Each nerve-bundle passing to a spindle has a definite nerve-sheath, composed of two or more layers. The nerve-bundle passing to the equatorial region of the spindle has usually a sheath composed of eight or more laminæ, whilst the nerves entering at the distal or proximal ends have a sheath containing two to three layers. The sheath of the nerve passes directly into the sheath of the spindle as the nerve enters.

Spindle-sheath.—The sheath of the spindle resembles that of the nerve, and, as has been pointed out by certain authors, has the appearance of an onion in cross section. The laminæ are extremely fine, and possess elongated nuclei at intervals. At the equatorial region these laminæ are numerous, an average number being eight to ten; at the distal and proximal ends of the spindle the number of laminæ become less, and eventually pass into the muscle-sheath. The characters of the sheath are best studied in cross section.

Blood-vessels.—The muscle-spindle is supplied with arteries and veins, which most frequently enter the spindle near the entrance of the central nerve, although vessels may be seen entering the spindle at various points.

Lymphatic and lymphatic spaces.—A lymph space is situated about the equatorial region of the spindle, and occupies about the middle one third of the spindle. In some of my specimens the space exists as such, whilst in others it is filled up by a granular material, which does not stain readily. Sherrington has been able to inject this space by injecting the lymphatics of the leg.

Septa.—Between the groups of muscle-fibres and nerves within the spindle, septa are often seen dividing the spindle into two or more parts; these septa are extremely fine, and pass into the sheath of the spindle.

Having then considered the normal muscle-spindle, one passes to its appearance under pathological conditions, and the first of them to be studied is infantile paralysis.

Infantile paralysis.—I have been able to examine the muscle from six cases of infantile paralysis; five of these were from museum specimens, and, having been preserved in spirit, could not be stained by Pal's method. In the sixth case I was able to obtain the arm fresh, and have been able to treat it by the methods above described. In all the cases the paralysis was of long standing. In four of the cases thirteen muscles were examined; all these muscles were considerably atrophied; some had apparently no normal muscle-fibres left, yet in all of these the muscle-spindles could be demonstrated, and the intra-fusal fibres were about the usual size. In the other two cases the whole substance of the muscle was replaced by fat, and in these two specimens I was unable to find any spindles (only small pieces of these muscles were obtainable). What is the condition of the nerves entering the muscle-spindle? In answer to this question, I was able to examine the muscles of case No. 6 by Pal's method, and it is found that not only the nerve entering the equatorial region of the spindle, but also the plexus of nerves towards the polar ends remain intact. The teased specimens give the same result, and also show that the striation of the intra-fusal fibres is well preserved. In

regard to infantile paralysis, it would seem probable that the muscle-spindle remains absolutely intact, both in regard to the intra-fusal muscle-fibres and in regard to the contained nerves.

Passing then to the second condition in which the spindles have been examined, viz.:—

Tabes.—I have examined the muscles from three cases. In two of these I had only portions of the muscle, which were given to me after being in Müller's fluid for some time. These I examined by the usual methods, staining them with hæmatoxylin and by Pal's method; and, so far as the examination goes, it shows that the spindles are normal, both in regard to the intra-fusal muscle-fibres and the nerve-supply. With regard to the third case, I have been able to examine it with greater care. Spindles have been teased out in the usual manner from the rectus femoris, vastus internus, and biceps of the arm. So far as the shape of the spindle and the nerves entering it is concerned, no change can be seen. The spindle does not, however, stain so readily with hæmatoxylin as does the normal spindle, and especially the equatorial region, which, as a rule, stains very deeply. The intra-fusal nerve-fibres, however, stain well. The striation of the intra-fusal muscle-fibre is well preserved. Examining the specimens of a spindle cut in longitudinal section, stained by Marchi solution, one finds, situated in the muscular fibre in the same position as the round cells which have been above described, evidence of degeneration. If now one examines the section stained by Pal's method, in order to find out if any degeneration has occurred in the nerve-fibre passing to this spot, one finds that the nerve-fibre stains well, and shows no sign of degeneration. In a third specimen the same appearance is observable. It is difficult to prove that the above-described condition is truly pathological, but it is a condition which I have found in tabes, and not under any other circumstances. That changes should be found in the terminal organs, while the nerve lying between the ganglion cell and the terminal organ remains intact, seems to me not only a possible but a probable lesion, for it has been shown by Cattaneo that, after section of the whole nerve, changes take place in the nerve-termination within thirty-six to thirty-eight hours, while changes in the medullated portion of the nerve are extremely slow. So that in tabes, where one has a gradual degeneration taking place in the cells of the posterior ganglion, it is not unreasonable to suppose that changes take place at the extreme end of the neuron without any change being manifest in the nerve itself. With regard to the other nerve-endings within the spindle, I find no evidence of degeneration.

In the third condition, viz. *myopathy*, I have had the opportunity of examining the muscles from one case, and in this case the following muscles were examined:—Biceps (arm), pectoral. major, pectoral. minor, serratus, quadriceps, gluteus, and rectus abdominis. The sections have been prepared in the usual manner, except that there are no teased specimens. With regard to the condition of the spindle, it is remarkable, on examining the biceps, how numerous the spindles seem to be, as many as seventeen being found cut in one section. I have never found so many in any normal biceps, not even in the biceps from a boy of the same age who died of phthisis. It was such an appearance which gave rise to the idea that these spindles were pathological bodies occurring in wasting muscles. This apparent increase is not so noticeable in the other muscles examined. With regard to the nerve supply, it is found that the nerves to the spindle all stain well by Pal's method, and the arrangement of the nerve-fibres can be well studied. The striation of the muscle-fibre is well marked within the spindle. In many of the spindles the intra-fusal fibre is as large and often larger than the extra-fusal fibre; the same condition is met with in the muscles of young children. In myopathy, then, the muscle-spindle remains without alteration.

In the fourth condition, viz. *progressive muscular atrophy*, the condition of the muscle-spindle has been worked at by more than one author—viz. Pilliet, Blocq, and Marinesco and Forster,—and they agree that the spindle does not undergo alteration. Forster has further shown that the nerve to the spindle remains intact. I have had the opportunity of examining muscles from three cases of progressive muscular atrophy. In the teased specimens from these cases it is noticeable how the large nerve-fibre passing to the spindle stands out against the surrounding atrophied fibres in the nerve. The spindle itself remains unaltered, the nerve-fibres within the spindle are natural, and the intra-fusal fibres preserve their striation. My observations, then, would agree with the above authors, viz. that the muscle-spindle remains unaltered in progressive muscular atrophy.

Peripheral neuritis.—I have had the opportunity of examining the muscles from only one case of peripheral neuritis, and in this case the atrophy of the muscles examined is not extensive; therefore it is a case of no great value in regard to the condition of the spindle. Three muscles were examined—the extensors of the wrist, the supinator longus, and the extensor longus digitorum. On microscopical examination of the first two named muscles, very little change is noted in the muscular structure. In the extensor longus digitorum there is a considerable amount of fat, some fibres considerably atrophied, others normal in appearance and size. In the extensor longus digitorum a muscle-spindle is seen in the middle of a completely atrophied area; the walls and muscle fibres appear to be normal, sections from Marchi's solution show no change, and staining with Pal's method shows the nerve-fibres are normal. The other muscles stained in a similar manner also show the normal spindle. In the teased specimens the intra-fusal muscle-fibres preserve their striation, the extra-fusal muscle-fibres have in many fibres lost their striation, and have a granular appearance. So far as one may judge from this case, one may say that in peripheral neuritis the spindle and its nerve remain intact after the muscle has become extensively atrophied; this is not, however, in agreement with a statement of Gudden.

In conclusion, then, it has been proved that the muscle-spindle is the sensory end organ in the muscle. It has been shown that it is a spindle-shaped body composed of a sheath resembling the Henle sheath of a nerve, within which are certain muscle bundles. These are extensively supplied by nerve-fibres which vary greatly in calibre and in mode of termination. It is shown, in the present paper, that in infantile paralysis the spindle remains absolutely normal, although the surrounding muscle-tissue undergoes complete atrophy. In tabes it has been shown that certain changes take place in the termination of the nerves, the general structure of the spindle remaining normal. In myopathy the spindle and its contained nerve are normal. In progressive muscular atrophy the spindle remains unaltered, and the same is probably true with regard to peripheral neuritis.

Many points yet remain to be worked out, and it is with the hope that some of you may take an interest in the subject that I have endeavoured to lay before you to-night, the knowledge we at present have of these bodies.

Extracts from a Text-book of Materia Medica of the Eighteenth Century.*

By Charles Powell White, M.A., M.B., F.R.C.S.

In the year 1727 appeared a book with the following title:—"Materia Medica, or a new description of the virtues and effects of all drugs or simple medicines now in use. Where from their principles these virtues, both common and specific, are shown, with the preparations of each and prescriptions: As also judicious remarks are everywhere interspersed. Done from the Latin original of Dr. Paul Harman, late Professor of Botany at Leyden. To which is prefixed a general introduction containing a mechanical account of all medicines upon human bodies. Also critical observations are added to each simple thro' the whole, wherever it was found necessary. By Edward Strother, M.D. Coll. Med. Lond. Reg. Colleg. 1727." †

The book is chiefly interesting, as it is one of the first, if not *the* first to recommend that treatment should be founded on a rational as opposed to an empirical basis.

The language in which it is written is the high-flown language peculiar to the period, with many "slang words" interspersed—such as "'em" for "them," "can't," "won't," &c., &c. The book commences with the preface, which opens with a eulogy on Dr. Harman, in which the translator laments that his works have been lost in oblivion; so that we shall not be far wrong if we ascribe the original to the end of the seventeenth century. The sources from which the translation was compiled were the notes taken by two of Dr. Harman's pupils.

Numerous statements throughout the book show that the translator was a deep-thinking man, far in advance of the teaching of his own time. Thus he believes in founding treatment on a scientific basis; he does not believe in spontaneous generation, and he thinks it would be an excellent plan if physicians kept notes of all their cases and the results of treatment for the benefit of posterity.

Most of the preface is taken up with a defence of the rational as

* A paper read before the Leeds Students' Medical Society.

† The book was published in two volumes, of which, unfortunately, I only possess the first.

opposed to the empirical use of drugs. He says: –"I believe I am not mistaken if I affirm Dr. Harman to have been the first who attempted this method." And again:—"The true physician is he who has modelled his experience into a Rationale; such a man can never fail of success but where the parts are irrecoverable." He shows scant sympathy for those who do not agree with him, as the following sentence shows: –"Without this method our knowledge is a mere hearsay, and whoever knows not this method is no better than an old woman."

He then goes on to describe his method: –"The virtues of drugs depend on the texture or substantial form, on chymical principles, and on the mechanical affections jointly. Our senses make us masters of their tactile qualities, whether they be hard, soft, heavy, sonorous, coloured, sharp, pungent, bitter, fragrant, fetid, elastick, cohæsive, hot, cold, dry, moist, fixt, volatile, corrosive, thick, thin, cylindrical, pointed, cubical, quickly or slowly extricable, and such like, and our understanding enables us to draw consequences from the preceding heads."

Thus, in describing a plant, he first describes its taste, colour, texture, &c., and from these he deduces its composition – *i. e.* whether they contain volatile or fixed soils, or earth, &c. From this composition he deduces the qualities of the plant; thus, if it is fragrant, it contains volatile salts and oils, and is therefore cephalic and carminative. He illustrates his point by the following, which is a good example of the circuitous mode of reasoning which is found throughout the book:—"It would seem a paradox to affirm that paper was made by motion till we consider that from motion arises heat; from heat, vapours; from vapours, rain; from rain awat'ring the seeds; from wat'ring plants grow; from the plant of linseed is made thread; from thread, cloth; and from cloth paper."

In this preface he gives some very sound and useful advice. He warns men, and especially young men, against being satisfied with running the changes with a very few drugs. But later on he says:—"I have already spoke enough concerning the too narrow bounds of ingredients now used in the practice; there is a fault seemingly opposed to this, namely too pompous a manner in prescribing. This method, besides the loathing it gives patients has a real inconvenience following it that it never lets us into the secret of what agrees or disagrees and it never gives us an insight into the remedy that performs the cure."

After the preface comes "A general introduction containing a mechanical account of all medicines upon human bodies." This introduction consists in a survey of the different sciences in so far as is necessary for his purpose. It will be interesting to consider these different sciences separately.

I. PHYSICS.

Matter is indestructible and immutable, and all bodies consist of the same matter.

The difference between solids and fluids is expressed thus:—"A solid body is that which has an unequal surface which touches in many points, and the more points they touch in, the more solid is that body reputed to be."

"A fluid body, that is a body which yields and gives ready way when touched, is a body composed of circular corpuscles and as circles are the measure of contact in other bodies, the more bodies recede from being circular, they touch in more points, so that fluids are reputed circular and solids cubical in their surfaces."

In these definitions he is evidently much confused between the bodies themselves and the molecules or corpuscles of which they are made up.

He then gives an account of the different and essential properties of matter, such as gravity and attraction, divisibility, mobility and motion, figurability, impenetrability, texture, and so on.

"Heat depends on motion, contact, attraction, and elasticity of bodies conjoined." "The utmost effects of heat is fire which arises from the most rapid motion of fit corpuscles among themselves."

He believes in the corpuscular theory of light, and makes rather a curious statement about colour:—"Whenever a body looses its taste and smell the colour of that body fades."

"Sound is a percussion of the air and its vibration which is so great as sometimes to shake wooden seats; for, as it is observed, organs will make the seats of churches to tremble."

II. CHEMISTRY.

There are said to be four chemical principles or elements of which bodies are composed, viz. acids, oils, water, and earth, to which he adds salts (acids, fixed and volatile).

Acids are, of course, called by the old names, some of which have survived to the present day—such as spirits of nitre, oil of vitriol, spirits of salt.

He is very dogmatic about crystals:—"If salts unite with hexagonical prisms it is nitre; if into pyramids, it is sea salt; if into cubical prisms, it is salt gem; if into prismatical glebes, it is borax."

There is a curious association of ideas in the following account of evaporation:—"As liquids are not always homogeneal, some finer, more subtile, and moveable particles ascend and leave the more gross particles behind, which, having large surfaces, and but little solidity, do readily come into large contacts and cohere. This is the case of serum placed over a candle and of wine-drinkers to excess, their aqueous parts fly off leaving the blood viscid."

He recognises that there is a very small difference between fermentation and putrefaction, but says that he has not time to show what the difference is.

III. PHYSIOLOGY.

Animal heat is caused by the friction of blood in the blood-vessels. Nerves are tubes which convey the animal spirits to all parts of the body. He says:—"As the spirits are observed to be recruited by aromaticks and fetids, we conclude that the particles these contain are similar in their nature to our animal spirits circulating in our nerves."

The mind has a power to vibrate our solids or to benumb them, and "our spirits are detained at its nod as effectually as Iron is attracted by the load stone." Joy and all sudden passions hasten the circulation, and sorrow retards it.

IV. PATHOLOGY.

There is not much pathology to be gathered from this book. The following is the most interesting piece of information under this head. He is discussing the actions of medicines, and says: "Who is there, I pray, understands what a physician means when he tells any one that he finds a certain drugg to be an excellent remedy in a dropsy or consumption? But if he should add that consumptions, generally, proceed from sharp salts in the blood which, by their frequent circulation, shave off the very coats of the vessels and tear the lungs and occasion original consumptions; and this medicine, being smooth, flexile, and porous, it sheathes those salts and sticks to the sides of the vessels and lines them with a mucous matter and hinders those effects of astimulation and corrosion and so prevents a consumption; he would then make his meaning clear and determinate."

There is a curious account of a *post-mortem* examination on a gentleman who used as snuff a powdered herb called basil and who "dy'd of a phrenzy whose brain when it was opened was found to contain a nest of scorpions." Basil was said to produce scorpions, but the translator says that he does not believe it, for "nothing is generated but from its proper seeds."

I cannot offer any explanation as to what the "nest of scorpions" was unless it was some sort of tumour.

Melancholy results from a contraction in the nerves, preventing the animal spirits from flowing through them; and in delirium the nerves are too open. In madness the spirits are too nimble and furiously moved.

V. PHARMACOLOGY AND THERAPEUTICS.

Vinegar is said to cool the blood in the following way: "It is a known fact that acids do generally coagulate the blood. However there are some acid spirits so weak that they will not have this effect. This is the case with vinegar and its spirit for one ounce of vinegar does not contain above 18 grains of acid in it. As there are various degrees of coagulation vinegar then has no other effect upon our juices than to arrest the circulation a little and to cool us or, to speak in more modern terms, than gently to attract the oils in the blood by their points to enter into the pores of the flexile particles of these oils, to change their spherical figure into hemispheres and into cubical or other plainer surfaces, to encrease thereby the blood's cohaesion, to destroy the elasticity of its globules and thus to destroy its fluidity, and consequently its velocity, and therefore its attrition or heat, that is, to cool us as has already been said."

There is a long list of terms given to drugs according to their action, such as cephalicks, sarcoticks, anodynes, epuloticks, uterines, &c. The action of a blistering plaster he describes thus: "The emplastick medicines stick close to the skin and hinder perspiration and at the same time they contain salts which stimulate the fibres and attenuate the fluids within so that at last the fibres crack and spill their contents which are changed by motion into matter and this we call suppuration."

He recognises two distinct actions of drugs which act on secretory

glands, one on the circulation, and the other on the gland itself. Thus, speaking of apium (parsley) he says: "It is diuretic because it sets the blood into motion by its volatile parts; and by its plentiful fixt salts it twinges the secretory ducts of the kidneys and serves as a lasting stimulus there to invite a copious secretion, which are two things required in promoting urine."

Here is a note on carminatives: "To be carminative is to expel wind, to do which we are to consider that whilst our juices ferment into bubbles and they, being of a tenacious character, don't readily crack wind swells us; and as volatile salts attenuate this matter and make them break the wind then readily escapes." Again, speaking of acorns or sweet-smelling flag, he says: "It is carminative inasmuch as the saline parts prick the bubbles giving colick pains and let out the wind they contain."

He explains the action of filix-mas thus: "It is used as a specific against worms because of its sweet inveigling them to swallow it whom it kills afterwards by its acrimonious and astringent taste."

A purge acts thus: "The volatile particles vellicate and twitch the guts and put them in mind of their duty; that is it revives the peristaltick motion when languid and by the liquors softens the cohaesions of the faeces and their adhesions to the intestines are equally surmounted."

Some purges, such as elaterium, are only to be given to "strong" persons.

VI. MATERIA MEDICA.

The description of the drugs is divided into eighteen heads, of which this volume contains six, namely: Roots, herbs, fungi, barks, woods, seeds. In the list of plants we recognise many familiar names, such as jalap, ipecacuanha, tobacco, senna, valerian, &c.

Scattered throughout the descriptions are various aphorisms or axioms as he calls them. For example:—

"All aromaticks, or all plants which have tetrapetalous flowers and husks containing very small seeds are cephalick."

"Whatever relieves or prejudices the stomach is observed to have the same consequences on the womb."

"All diuretics in large doses are diaphoretick," &c.

An example of his method of deducing the action of drugs is this:

"Bardana, burdock. It is of a gently bitterish, sweetish, subacrid taste; but of no smell.

"It therefore consists of gentle fixt salts and some few volatile also, as also of some oleous particles.

"Its virtues are to be diaphoretic and diuretic from the salts it contains; and it is anodyne in the venereal disease because it contains oils."

"Althaea (marshmallow). Softens the salts that harden wounds and prick them into pains: It obtunds and envelops the acrimonious salts which occasion consumptions, ulcers of the kidneys or bladder. It glibs the passages in a fit of the stone, and thus eases the anguishes of these diseases."

Of jalap we are told that it was introduced in the year 1654. It is to be given as a powder to a dram in strong persons, in weaker to a scruple. Ipecacuanha was introduced between the original work and the translation. Dr. Strother has a foot-note about it.

"Ipecacuanha is an emetick and cathartick. It is said to be an astringent; but how comes it to be reputed an astringent when hardly one grain of it remains in the stomach after the first puke?"

Orris root used to be used as a powder to absorb discharges from carious bone. Dr. Strother says in a foot-note: "Our modern surgeons make use of dry cotton to absorb these moistures with success." This apparently means that cotton-wool was introduced as a surgical dressing about that time.

Of peony we are told that some gather it before the new moon, when the sun is in Aries, before sunrise. This is the only reference to astrology in the book, except one other, where a particular plant is to be gathered at the waxing of the moon.

Under petroselinum (garden parsley) we have the following: "Care must be taken how we administer it to such as are subject to epileptic disorders; for it raises nidorous fumes and flatus's which by reason of their nimble parts soon reach the brain and hurry on dangerous symptoms. Moreover it excites venery and all medicines which provoke venery are hurtful to epileptics, inasmuch as the seminal parts are membranous and so are the brain-covers and both are thereby stimulated."

It seems curious to us now-a-days to talk about flatus reaching the brain, and we do not recognise much resemblance between the structure of the meninges and the testicles.

Of melissa (bawm) we are told that it is "of a taste gently pungent, and bitterish joined to a stypticity, and of a scent gratefully aromatic." It should be gathered in the spring before it flowers, because when it flowers it smells like "bugs bruised."

Tobacco is said to be of a poisonous and narcotic scent. He says:—"It is plainly narcotick from its viscid and fattish taste and smell by which it inviscates the spirits and retards their motion: but it must be confessed, we find little reason to suppose it comforts the spirits, either from its acrimony or its smell or by any of its effects. It purges serum and vomits strongly."

"In the Iliac Passion the smoak of tobacco taken glyster-wise and blown forcibly into the intestines is the most efficacious remedy known. It may after some time be repeated if the first don't purge them."

In the plague there is

"No plant like Tobacco; it exceeds all others."

I will, before concluding, give one or two examples of prescriptions. With regard to prescribing, he makes note that it is sometimes advisable to consult the patient's palate, otherwise "they are not swallowed and are thrown away."

Here is an ointment for burns:—"For burns I always use the following ointment and order it to be in readiness for domestic use. I order Leaks, Hensdung and Hogslard to be made up and apply it on occasion."

To make a poultice for leprosy:—Take six rotten apples and press them through a sieve; add oil of roses 2 ounces; a little of woman's milk; make a cataplasm to be apply'd to the part in pain where there is a leprous swelling."

Here, lastly, is a prescription for rickets. It is rather curious after the author's warning against too pompous a method of prescribing:—"Take leaves of Scordium, common Wormwood, Camomile, the lesser Centaury, of Carduus benedictus, of Southernwood, Pennyroyal, white Horehound, wild Thyme, Mint, Sage, Rue, Ground pine, Germander, Motherwort, and Lily of the valley, St. John's Wort, Golden Rod, Saxifrage and Calamint. Let them all be fresh gathered and cut them small. To one handful of each add Hogslard 4 pounds; Mutton suet and Claret of each 2 pounds; let them macerate in a pot and then boil them to the consumption of their moisture: then strain and make an ointment, with which anoint the belly and hypochondres; and also the armpits in a ricketty child for a whole month twice a day. This is Sydenham's prescription and I have found it of very great use in the case mentioned."

There would be some difficulty about inducing a chemist to make up such a prescription at the present time.

I have endeavoured to give a selection from the most interesting pieces of this book. Many more examples might be given, but these are enough to show that, in spite of the limited scientific knowledge of the period, the author and translator made what use they could of it to found a rational system of therapeutics.

I will conclude with the following extract, with which the preface closes:—"To be serviceable to mankind Learning is preferable to Wit: This is fitter for conversation and light entertainment, but that for the Cabinet. Wit is too volatile to wait for events, but learning is the best introduction to a patient enquiry. The man of application is curious and grapples with difficulties readily, and unravels them with ease."

Notes.

MANY who are well acquainted with the writings of "Cavendish" are probably unaware that the greatest authority on whist was a Bart's man. Mr. Henry Jones, who died on February 10th, received his medical education at this Hospital, and qualified in 1852. He ceased to practise in 1869. It was in 1862 that he published his book on "The Laws and Principles of Whist," under his now familiar pseudonym.

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MR. T. J. HORDER, M.B., has been elected a Casualty Physician, vice Dr. F. E. Batten.

* * *

WE have received from Mr. R. W. Hornabrook, M.B.,

an excellent report on the Dharwar Plague Hospital, Bombay Presidency. It is a capital piece of work, and is adorned by capital photographs, illustrating natives undergoing inoculation, the morning inspection, and the dressing of convalescent patients.

* * *

THE question is often raised as to the hour of the day at which most deliveries occur. Mr. Godfrey Lowe, in an interesting paper read before the Lincoln Medical Society, answers this question as follows: "My experience of confinements is that exactly 25 per cent. occur between midnight and 4 a.m.; 22 per cent. occur during the next four hours, *i.e.* from 4 to 8 p.m.; only 10 per cent. happen during the four hours between breakfast and lunch; and only 11 per cent. between lunch and tea. Between 4 p.m. and 8 p.m., however, we are very busy, because we have to attend 21 per cent. of our cases, but we have the consolation of knowing that when we come to our dinner about 8, that we have only 11 per cent. to attend between then and midnight."

* * *

So that it appears that while midwifery cases kindly refrain from interfering with the morning and afternoon rounds, the hardworked practitioner has to attend 47 per cent. of his cases during the hours when, both in his own interests and in those of his other patients, he had much better be in bed. Midwifery is indeed a thorn in the flesh of the general practitioner; it is worse paid and occupies more time than the rest of his routine work. He gets the discredit of any mishap that may occur, and, to crown it all, he frequently has to sacrifice his night's rest, on which his health and general well-being depend so much. It is no exaggeration to say that midwifery fees in general practice are grossly disproportionate to the time employed. Many a practitioner who charges five shillings for a visit considers himself lucky if he gets two guineas for a midwifery case. Yet compare the amount of time spent in the two instances!

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DR. CALVERT has been appointed Joint Lecturer with Dr. Lauder Brunton in Materia Medica, Pharmacology, and Therapeutics.

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MR. ALBAN DORAN delivered the Presidential Address before the Obstetrical Society on March 1st. He dealt with the advancement of gynæcological surgery during the past fifty years in a most interesting manner.

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DR. GEE's first Lumleian lecture was delivered on March 16th. In this he took up the subject of "The Causes and Forms of Bronchitis." Incidentally he raised a curious etymological point. "Croupous pneumonia is what Polonius would have called a vile phrase. It is amusing to note how the lowland Scotch word 'croup' (the cognate English word for 'roup'), which signifies a certain kind of noise, has come to be applied to a morbid exudation—a perversion due to foreign pathologists who could not have known the meaning of the word they were using or abusing. And thus croup, having undergone this strange metamorphosis in the course of his travels abroad, comes back disguised to his native land, and we receive him with open arms. Such are English ways."

* * *

WE should welcome correspondence from students on subjects of general interest. This announcement is made because there appears to be an impression abroad that such would not be published. This, we need hardly say, is erroneous.

* * *

THE tale of students' gazettes is now made complete by the publication of the *Charing Cross Hospital Gazette*. We have just received the first number, and extend a welcome to our new contemporary. It is to appear every two months, and we wish it all success.

* * *

Two courses of Operative Surgery for the Final F.R.C.S. will be held; one beginning on April 15th, the other on May 1st. Those who wish to join should send in their names to Morris at once.

* * *

A dance will be given by the United Hospital Rifle Association at Addison Hall, Kensington, on Friday, May 26th, 1899. Tickets, price five shillings, can be obtained from H. E. Weekes, 19, Sinclair Gardens, W. and St. Thomas's Hospital, or Walton R. Read, St. Bartholomew's Hospital.

Amalgamated Clubs.

RUGBY UNION FOOTBALL CLUB.

ST. BART.'S *v.* NORTHAMPTON.

This match was played at Northampton on February 4th. We were without our halves, Ash and Scott, and Mayo from the three-quarter line. The ground was very hard from the recent frost. The first half Bart.'s started with the wind, the game up to half-time being very good. On re-starting snow fell very thickly, the wind blowing so strong that it was almost impossible to face it. Northampton scored freely. The game was stopped before full time on account of the weather. Final score—Northampton, 29 points; Bart.'s, *nil*. Team:

T. M. Body (back); F. C. Gillies, James, Roslin, and Wells (three-quarter backs); Ward, Carroll (half-backs); Robbs, Adams, O'Neill, Tosswill, Wilson, Plews, Arnould, and West (forwards).

ST. BART.'S *v.* UPPER CLAPTON.

Played at Upper Clapton on February 18th. Bart.'s went down two short, with Body, Mayo, James, Ash, Scott, Adams, Tosswill, and Amsler away. Only one substitute could be obtained, so we played one short. A very good game resulted in Bart.'s being defeated by 2 tries to *nil*. Team:

Nedwill (back); Gillies, Walker, Wells, Roslin (three-quarter backs); Wilson, Carroll (half-backs); Robbs, O'Neill, Wilson, Plews, MacLaren, Scott (forwards).

CUP TIES.

ST. BART.'S *v.* WESTMINSTER.

This match, originally fixed for January 27th, was postponed on account of frost until February 6th, when it was played at Richmond, Bart.'s winning by 2 goals and 6 tries to *nil*. Carroll, Gillies, and James, in the three-quarter line, played well, whilst amongst the forwards O'Neill, Tosswill, and Wilson were the most prominent. Team:

T. M. Body (back); T. A. Mayo, J. B. Gillies, H. W. James, F. R. Carroll (three-quarter backs); B. N. Ash, W. H. Scott (half-backs); A. J. W. Wells (captain), C. H. D. Robbs, H. C. Adams, A. O'Neill, L. R. Tosswill, H. T. Wilson, J. M. Plews, J. A. West (forwards).

ST. BART.'S *v.* ST. MARY'S.

This tie was played at Richmond on February 16th, Mary's winning by 1 goal and 1 try (8 points) to *nil*. Mary's started. The return was poor, play settling down in Bart.'s territory. Mary's showed themselves superior in the scrums, the Bart.'s forwards playing very badly. Nothing was scored until nearly half-time, when Mary's obtained a try, which was converted. About fifteen minutes from the start Adams wrenched his knee, and was obliged to go off; he returned later, but was practically useless. During the second half Mary's scored 1 try, the final score being—Mary's, 1 goal and 1 try (8 points); Bart.'s, *nil*. Team:

T. M. Body (back); T. A. Mayo, J. B. Gillies, H. W. James, F. R. Carroll (three-quarter backs); B. N. Ash, W. H. Scott (half-backs); A. J. W. Wells (captain), C. H. D. Robbs, H. C. Adams, A. O'Neill, L. R. Tosswill, H. T. Wilson, J. M. Plews, A. M. Amsler (forwards).

ASSOCIATION FOOTBALL CLUB.

This year's record is a good one, and notwithstanding the fact that Bart.'s do not hold the Inter-Hospital Challenge Cup, yet there is no doubt in the minds of those Bart.'s men who saw the match against London Hospital, that with any luck they would have won it on the day's play. And while on the subject of the final tie, though it was confessedly bad weather—it was snowing hard—yet nearly two hundred London Hospital men went down to see their team play, and twenty at the very most went down from St. Bartholomew's Hospital. Nearly a hundred per cent. of the members of the Hospital are members of the Amalgamated Clubs, and so confessedly take interest in some branch of sport, and yet the largest school of medicine in London can only send twenty men against London Hospital's two hundred for the final of the Inter-Hospital Cup Tie. There are only three such during the whole year. Yet public spirit comes not by recrimination.

Certainly Willett is to be congratulated on having got such a good team together, for there were no less than five vacancies to be filled at the beginning of the year. The inside forwards, Willett, O'Brien, and Ward, are capable of excellent combination, and were it not for the old hereditary hospital failing, viz. weakness in front of goal, would do a lot of scoring, and as a matter of fact both O'Brien and Ward have scored twenty-eight goals each this season. The former has great command of the ball, and passes most accurately. The half-backs are undoubtedly the weak spot in the team, though Masterman has proved quite an acquisition, and shines most at centre, where his tackling and passing are both good. Bostock played a very good game against London Hospital, and Miller and Bates are both very hard-working though scarcely scientific players. Of the backs Orton is as good as ever, and it was very bad luck his falling ill in the last Cup tie, though Thomas took his place very ably. Fowler, who is new this year, is undoubtedly one of the best backs we have had up for some time, and if he can be a little quicker in getting rid of the ball, should be invaluable next year. Butcher, the goal-keeper, is good in everything but Cup ties, where—we are sure through nervousness—he has been lamentably bad.

With very few of the present team out of their year, the Hospital should certainly have as good a team as has been seen for some time next year.

ST. BART.'S HOSPITAL *v.* ROYAL VETERINARY COLLEGE.

This match was played on Wednesday, February 8th, in very unpropitious weather at Winchmore Hill, and resulted in a win for Bart.'s by 3 goals to *nil*. The Hospital were only able to put a very moderate team in the field, Willett, Fowler, Ward, and Thomas being absentees. L. Orton, whose first appearance it was in the team since the vacation, played a very sound game throughout.

Despite the fact that the ground in many parts was under water and that there was a steady downpour of rain which lasted till the close of the game, our opponents were very keen on trying conclusions. After the game had been only a short time in progress, Marrett scored for the Hospital from a good pass by G. H. Orton. No further scoring occurred before half-time.

On restarting the game after half-time, O'Brien broke away and beat the opposing custodian with a fast cross shot. Our opponents' forwards, whose attempts up to now had been completely foiled by the brilliant tackling of Bates and L. Orton, got away, but were pulled up by L. Orton, Butcher clearing the shot splendidly. A few minutes before time O'Brien further increased the Hospital score to three, the game ending as above. Team:

H. H. Butcher (goal); F. E. Taylor, L. Orton (backs); G. W. Miller, T. Bates, C. H. Fernie (half-backs); H. N. Marrett, G. H. Orton, C. O'Brien, R. Walker, F. S. Lister (forwards).

ST. BART.'S HOSPITAL *v.* EALING.

Played on Saturday, February 18th, at Mill Hill Park, before a large and enthusiastic attendance. The game, which was very fast and well contested throughout, ended in a draw of 2 goals to 2. Willett losing the toss, O'Brien kicked off against the sun, but with the wind slightly in our favour. After some desultory play, Bart.'s forwards settled down, and taking the ball up the field, O'Brien scored for the Hospital from some pretty passing among the insides. Bart.'s did not hold the advantage long, as the right wing of the Ealing forwards got clear away and scored, giving Butcher no chance of saving.

On resuming the game, which still continued very fast and spirited, the Hospital had the best of the exchanges, but were unable to break through the Ealing defence until shortly before time, from a good run and centre by Lister, Ward obtained possession and added the second goal. Unfortunately, however, Ealing soon equalised, and nothing further being added to either score the game ended in a draw. Team:

H. H. Butcher (goal); T. H. Fowler, L. Orton (backs); F. E. Taylor, H. E. Thomas, T. Bates (half-backs); H. N. Marrett, J. A. Willett, C. O'Brien, V. G. Ward, F. S. Lister (forwards).

2ND XI. INTER-HOSPITAL ASSOCIATION CUP.

This Cup, which was instituted last year, and which was won by Bart.'s, can now be seen on the library table. Mr. Jessop has kindly bought the Cup, as the subscriptions for the entries, out of which it is to be paid for, are not yet sufficient, there being only five entries last year. This year, however, six hospitals have entered, viz. Bart.'s, Thomas's, Guy's, Mary's, London, Middlesex.

2ND XI. INTER-HOSPITAL CUP TIE.

Semi-final.—BART.'S *v.* LONDON.

This match was played at Winchmore Hill on Tuesday, February 24th, and resulted in a win for Bart.'s by 3 goals to 1.

London kicked off, Bart.'s being one man short at the start, and after about ten minutes' play scored from the left wing. Nothing more was scored at half-time, though Bart.'s pressed most of the time. After half-time the Bart.'s forwards got together, and a goal soon resulted from a scrum in front of goal. Shortly after this Walker scored from a good shot; Bart.'s continued to press, London, thanks to the excellent defence, never being dangerous. Just before time Walker scored again, and Bart.'s qualified for the final by 3 goals to 1.

INTER-HOSPITAL ASSOCIATION CHALLENGE CUP.

Final Round.

ST. BARTHOLOMEW'S *v.* LONDON.

This final tie took place on Tuesday, 21st March, at Northumberland Park ground, at White Hart Lane, before a very large number of spectators, most of whom were supporters from London Hospital. The ground was ruled playable, though covered with snow, and O'Brien kicked off for the hospital at 3.20. A good run by the Bart.'s forwards was checked by Wilson, and the London forwards obtaining possession the game was taken into the Bart.'s quarter, a shot from Wilson ending, however, fruitlessly. Some good play followed, the inside forwards, well backed up by Masterman, continually looking like scoring, but the shots went wide. Shortly after Butcher was called upon to save, and conceded a corner, after which Ward obtained possession, and passing to O'Brien the latter sent to Marrett, who centred too far ahead, the ball being returned by Green, and Thwaites obtaining sent in a good shot which only just skimmed

the bar. The rest of the play till half-time was played in a thick snowstorm, in which the spectators could with great difficulty recognise the ball or players. Nothing, however, resulted, and when half-time sounded the score stood 0—0.

On resuming, the weather brightened a little, but the snow made sure play very difficult; still the ball travelling from end to end kept the teams going at a great rate. Fowler, Masterman, and Thomas were repeatedly in evidence, and stopped some very dangerous looking rushes from the London forwards. The Bart's. forwards, looking as if they were going through, did not manage to get any close shooting, though Ward and O'Brien both put in some good long shots, and once a very smart piece of hustling by Walker and Ward only just enabled Enthoven to get the ball behind, thus conceding a corner.

A few minutes later the London outside right obtained the ball, and running well down centred to G. P. Wilson, who shot, but Butcher returned—only, however, to let the inside right, Hutcheson, send the ball into the net, a shot which Butcher should have saved. An appeal for "off-side" was disallowed. From this point onward the London Hospital players had the best of the game, and should have scored twice, but the opportunities were not taken advantage of. One run only during the last ten minutes of the game by the Bart's. forwards looked dangerous, the halves and forwards struggling valiantly to avert defeat, but the whistle blew with the score remaining London 1, Bart's. 0. London Hospital retain the Cup for the second year in succession. Teams:

Bart.'s—H. Butcher (goal); T. H. Fowler and H. E. Thomas (backs); A. H. Bostock, W. R. Masterman, J. W. Miller (half-backs); R. Walker, V. G. Ward, C. O'Brien, J. A. Willett (captain), H. N. Marrett (forwards).

London Hospital.—Enthoven (goal); A. P. Wilson and P. A. Green (backs); H. Fletcher (captain), H. Thwaites, B. Whitington (half-backs); A. Jeffries, A. Hutcheson, G. P. Wilson, H. Walker, and E. W. Grogono (forwards).

Of the players the backs and halves were good, Masterman being especially so, and looking well after Wilson. Bostock played a good game. The forwards, especially Ward, O'Brien, and Willett, combined well considering the ground, and were certainly unfortunate in not scoring, though in justice it must be said that the London Hospital defence was of the very best. R. Walker was the weak spot, but he was playing out of place, and with, of course, a new partner. Lister was very much missed.

The game itself was a good one, keen from start to finish, and only in the last ten minutes did London show any superiority.

HOCKEY CLUB.

January 7th.—*v.* HITCHIN.

This return match was played at Winchmore Hill, and resulted in an easy win for the Hospital by 8—1. The visitors, however, were not at full strength.

January 21st.—*v.* CRYSTAL PALACE 2ND.

Played in the mud at the Palace. The Hospital played one short for most of the game, which was evenly contested, the Palace winning just before time was called. Result—Palace won by 4—3.

January 25th.—*v.* KINGSTON GRAMMAR SCHOOL.

An even game at Kingston resulted in a loss by 1—2. The Hospital scored through Pennefather in the first half, but in the second the School played up, and scoring twice, won as above.

February 4th.—"A" TEAM *v.* SOUTHGATE 3RD.

A scrambling game resulted in a win for the Hospital by 3—0.

Problems in Diagnosis.

SOLUTION TO "PROBLEM" IN LAST MONTH'S "JOURNAL."

P. M.—"Hobnailed" cirrhosis of liver. Thrombosis of portal vein and its branches, leading to infarction, with great engorgement of a portion of duodenum and occlusion of its lumen. Gastric and intestinal hæmorrhage. Enlarged spleen. Chronic interstitial nephritis. Ascites. Obesity.

The infarcted gut is preserved as "Museum specimen No. 1956 G."

Abernethian Society.

ON Thursday, Feb. 16th, Dr. Griffith addressed the Society on "Management of Labour in Private Practice." He insisted primarily on due consideration being shown to the patient. There were certain questions which a doctor attending a midwifery case would be asked: (1) What day the confinement should be expected? (2) When is the nurse to come? It was not a good thing to have a nurse in the house at all before labour if this could be managed, but in the country that was obviously difficult. The nurse should be engaged to hold herself in readiness a week before the event. In the choice of a room for the confinement any glaring insanitary defects should be avoided. The bed should be a narrow one. The necessary chemicals should be got in some time before the expected confinement. Ergole was the preparation of ergot which he recommended. An initial examination six weeks before labour should be urged upon the patient. Friends should be duly informed of any abnormality with regard to the labour.

After a formal vote of thanks the meeting terminated. There were present about 180 members.

On Thursday, Dec. 17th, a special general meeting was held, when Mr. F. C. Borrow was elected additional Committeeman, vice Dr. W. Morley Fletcher. Mr. Jameson's proposal that two chess boards should be placed in the Society's rooms was not adopted. An amendment proposed by Mr. Whitaker, that the question be left open until the Chess Club had been amalgamated with the other clubs, was carried.

On Feb. 23rd a meeting was held, Mr. Stawell, Vice-President, in the chair. Mr. Ball showed microscopic specimens of cystin found in the urine of a patient under his observation.

Mr. Thursfield read a paper "Concerning Pleurisy." He said that probably most cases, not all, were due to the tubercle bacillus. In *diagnosis* Mr. Thursfield laid most stress on (1) dulness, with characteristic distribution; (2) displacement of viscera. There was not sufficient stress attached to the frequency with which well-marked bronchial breathing and bronchophony occurred. He pointed out that hæmorrhagic pleurisy was not always due to malignant disease, many other causes giving it, *e. g.* tubercle, cirrhosis, aneurism, &c. In discussing treatment, Mr. Thursfield argued that tapping should not be left too late, as sudden death may occur. The more fluid withdrawn the better. Empyema was essentially an abscess, and the pleural cavity should be opened and the abscess cavity thoroughly drained. An interesting discussion followed.

An ordinary meeting of the Society was held on Thursday, March 2nd, Mr. T. J. Horder in the chair. Dr. Andrewes read a paper on "The Causation of Summer

Diarrhœa." Summer diarrhœa was not a symptom, but a disease. Its mortality was eighteen times greater in the summer than in the winter. As ætiological factors were mentioned (*a*) age; (*b*) food; (*c*) earth temperature. It was due to the presence of the microbe *Bacillus enteritidis sporogenes*, as was discovered by Dr. Klein in 1895.

The spores of this bacillus were found in the stools; their resistance was extreme, almost the greatest known. The bacillus itself is found in cultivated soil and in sewage, in conjunction with the *Bacillus coli communis*.

A discussion followed, and Dr. Andrewes in his reply recommended calomel, opium, and castor oil as sheet-anchors in the treatment.

An ordinary meeting was held on Thursday, April 9th, Mr. T. J. Horder, President, in the chair. The names of gentlemen nominated to act as officers of the Society for the ensuing year were read. Messrs. Maxwell and Morland were appointed Auditors of the Society's accounts for session 1898-9. Mr. Paterson demonstrated his apparatus for use in prolonged administration of nitrous oxide gas to induce prolonged anæsthesia in operations about the mouth.

Mr. Coleman then read his paper on "Tuberculin." He first of all gave a *resumé* of Koch's work, which resulted in the separation and formation of tuberculin, and described the methods by means of which the fluids known as TA, TO, and TR were produced. TR is that now used for clinical work. The conclusions he came to were that TR is harmless, and that it is beneficial in selected cases, but that its expense was a serious argument against its use; that as a diagnostic agent the old tuberculin was of undoubted use when applied to cattle, and was a valuable aid when applied to man.

An interesting discussion followed.

The poll for the election of officers took place on March 16th between 12.30 and 1.30; and the number of candidates for the various offices excited much interest in the contest. Almost an unprecedentedly large number of votes were registered. At the Annual General Meeting held in the evening the following were declared duly elected:

Presidents.—Mr. A. R. J. Douglas; Mr. L. B. Rawling.

Vice-Presidents.—Mr. W. T. Rowe; Mr. H. D. Everington.

Secretaries.—Mr. E. M. Niall, Mr. R. Bigg.

Additional Committeemen.—Mr. J. Corbin, Mr. E. C. Williams.

The Annual Report was then presented, and after some lively discussion, adopted. A copy of this report is appended.

COPY OF THE REPORT OF THE COMMITTEE ON THE SESSION 1898-9.

In presenting the Annual Report your Committee have much satisfaction in reviewing the record of attendance at the ordinary meetings of the Society during the past Session. The number of members present has reached the high average of 44. This, however, is in some measure due to the exceptionally large attendance of 220 members at one of the recent meetings. At the inaugural address delivered by Sir Thomas Smith in October, 1898, the total of the audience was estimated at 550.

The two mid-sessional addresses given by the late Professor Kanthack and Mr. Berry were both largely attended.

At the seventeen ordinary meetings of the Society, papers were read by three members of the Hospital Staff, by the Casualty Physicians, by two present and seven past members of the Resident Staff, and the three remaining meetings were devoted to clinical and pathological discussions

During the past year 100 members have joined the Society, but only £88 4*s.* has been paid in subscriptions; the remainder are delayed. There is a balance in the bank of £18 3*s.* 8*d.*

In conclusion, your Committee feel that reference should be made here to the great loss sustained by the Society in the death of Professor Kanthack, always an enthusiastic member and a sincere friend of the Society.

Volunteer Medical Staff Corps.

THE Third Annual Ball given by the St. Bartholomew's and St. Thomas's Hospital members of the above corps was held at the Queen's Hall, Langham Place, on the 8th ult. The guests included members of the Hospital and Nursing Staffs, and a most enjoyable evening was spent. The music was supplied by the band of the Royal Artillery. Some 200 guests sat down to supper. It is satisfactory to record that in addition to being a thoroughly successful function socially, the Committee are able to report a good financial result, a surplus of £4 18*s.* 1½*d.* being in the hands of the Treasurer.

At a committee meeting of the company, held on the 3rd inst., it was unanimously resolved that the entire surplus should be handed over to the fund now being raised for the memorial to the late Professor Kanthack in recognition not only of his great services to the profession, but also of the fact that, in spite of the many demands upon his time, he was able to devote a portion of his leisure hours to the duties of surgeon-lieutenant in the Cambridge University Volunteers.

Kanthack Memorial Fund.

THE following is the list of subscriptions to the Kanthack Memorial Fund received up to March 18th. We may remind those who wish to subscribe that the Hon. Secretary of the Fund is Dr. J. H. Drysdale, 25, Welbeck Street, W.

	£	*s.*	*d.*
Mrs. L. Andrews	5	5	0
James Berry, Esq., F.R.C.S.	3	3	0
Harrison Cripps, Esq., F.R.C.S.	2	2	0
H. J. May, Esq., M.B.	5	0	0
W. P. Herringham, Esq., M.D.	2	2	0
F. E. Batten, Esq., M.D.	1	1	0
E. W. Willett, Esq., F.R.C.S.	5	5	0
W. S. Church, Esq., M.D.	10	10	0
H. G. Read, Esq., M.R.C.S., L.R.C.P.	1	1	0
Sir T. Smith, Bart.	10	10	0
Sir James Paget, Bart.	2	2	0
W. S. A. Griffith, Esq., M.D.	10	0	0
F. W. Andrewes, Esq., M.D.	5	5	0
D'Arcy Power, Esq., F.R.C.S.	2	2	0
H. W. Page, Esq., F.R.C.S.	5	5	0
H. M. Fletcher, Esq., M.D.	10	10	0
A. E. Garrod, Esq., M.D.	5	5	0
P. Furnivall, Esq., F.R.C.S.	5	5	0
C. P. White, Esq., F.R.C.S.	5	5	0
W. G. Heasman, Esq., M.R.C.S., L.R.C.P.	5	5	0
C. A. Ballance, Esq., F.R.C.S.	5	5	0
G. E. G. Metcalfe, Esq., L.R.C.P.	1	1	0
H. Rundle, Esq., F.R.C.S.	2	2	0
G. Saunders, Esq., M.D., C.B.	2	2	0

	£	s.	d.
D. R. P. Stephens, F.R.C.S.	1	1	0
Anonymous	10	0	0
L. Thorne-Thorne, Esq., M.D.	1	1	0
R. F. Jowers, Esq., F.R.C.S.	2	2	0
C. P. Handson, Esq., M.D.	1	1	0
F. D. Bennett, M.R.C.S., L.R.C.P.	1	1	0
E. W. Roughton, Esq., F.R.C.S.	1	1	0
A. McC. Weir, Esq., M.D.	1	1	0
W. D. Stone, Esq., M.D., F.R.C.S.	1	1	0
G. N. Stephen, Esq., M.R.C.S.	1	1	0
Surg. Maj.-General R. W. Rice	10	10	0
H. A. Ballance, Esq., F.R.C.S.	1	1	0
L. G. Glover, Esq., M.D.	2	2	0
J. A. Ormerod, Esq., M.D.	3	3	0
Sir Felix Semon, Kt.	10	10	0
W. S.	1	1	0
W. P. Digby, Esq.	1	1	0
S. J. Ross, Esq., M.B.	1	0	0
W. H. Maidlow, Esq., M.D.	0	10	6
Surgeon W. J. Codrington, R.N.	0	10	0
W. G Clark, Esq., F.R.C.S.	10	10	0
H. J. Capon, Esq, M.D.	1	1	0
H. B. Maingay, Esq., F.R.C.S.	1	1	0
H. Willoughby Gardner, Esq., M.D.	3	3	0
T. S. Stevenson, Esq., M.D.	2	2	0
H. Huxley, Esq., M.R.C.S., L.R.C.P.	5	0	0
G. R. Murray, Esq., M.D.	2	2	0
H. T. Butlin, Esq., D.C.L., F.R.C.S.	10	10	0
F. de Havilland Hall, Esq., M.D.	3	3	0
J. Westlake, Esq., Q.C.	5	0	0
J A. Hayward, Esq., M.D.	5	5	0
A E. Wynter, Esq., M.D.	2	2	0
J. H. Lightbody, Esq., M.D.	2	2	0
G. H. R. Holden, Esq, M.D.	1	1	0
Arthur Kuttner, Esq, M.D. (Berlin)	10	0	0
F. P. Weber, Esq., M.D.	2	2	0
T. M. Legge, Esq., M.D.	5	0	0
T. Lauder Brunton, Esq., M.D., F.R.S.	10	10	0
G. C. Taylor, Esq., M.B.	1	1	0
W. Langdon Brown, Esq., M.B.	1	1	0
Sidney Martin, Esq., M.D, F.R.S.	3	3	0
C. Butler, Esq., M.D.	5	5	0
A. W. Blackwell, Esq., M.D.	0	10	6
Lovell Drage, Esq., M.D.	5	0	0
Hon. G. Scott	2	2	0
Captain H. A. Berryman, R.A.M.C.	2	2	0
T. J. Horder, Esq., M.B.	1	1	0
Total	£267	11	0

Reviews.

THE RADICAL CURE OF HERNIA, HYDROCELE, AND VARICOCELE, by C. B. Lockwood, F.R.C.S. (Young J. Pentland, London and Edinburgh.)

IT is only of recent years that the ruptured have begun to realise it is not necessary to pass through life handicapped by a truss; but the general public, and even the medical profession, have yet to learn that every case of hernia is not suitable for operation. It is with this important question that Chapter I in the book before us deals. We have never met with a clearer statement of the indications for, and the points which contra-indicate, operation than is here given.

We would particularly recommend to the reader's notice those sections which distinguish between the radical and palliative operation—that is to say, between those cases in which a permanent cure is aimed at, and those in which the operation is undertaken to enable the patient to wear a truss. A right understanding on this point will prevent much disappointment.

In our opinion, scarcely sufficient space is devoted to the consideration of hernia in childhood. The author says:—"in infancy and childhood ruptures usually get well if properly treated with a truss." This sentence, we believe, needs modification, for we are convinced that many of these supposed cures relapse in later life. We have recently seen two young women, both of whom suffered from rupture in childhood and were "cured" by wearing a truss, but in each case the hernia reappeared during their first pregnancy.

Chapter II deals with the many important details, other than the actual operation, which make for success.

These few pages are specially worthy of attention, for they afford an instance of that thoroughness and care in the preliminaries which is one of the highest developments of modern surgery. Every detail is the result of a process of evolution, and the completed picture as given to us in these pages represents the highest point which the development has yet reached.

May we, as the result of our own experience, suggest one detail? Discomfort, and in many cases actual pain, is saved, if the precaution be taken of having the pubes shaved some hours before dressing. No matter how carefully the shaving may be performed, a number of superficial cuts and abrasions occur; these in their recent state, when irritated by the strong lotions, make the dressing a painful process. But if a few hours be allowed to elapse, not only does the dressing become almost painless, but the liability to eczema is diminished.

The next five chapters are devoted to the operation for inguinal hernia and the conditions which may complicate it. The operation is one which the author's experience has led him to regard as the best—a modification of the method of Bassini. The description is clear, and its value is enhanced by illustrations showing the different steps. The question of the advisability of operation during pregnancy is only slightly touched upon. The author has performed it twice with success. From an observation of four cases during labour, we have formed the opinion that reducible inguinal and femoral hernia are unlikely to suffer—the pregnant uterus acting as a natural pad in keeping the intestines out of the way. The same conditions could not, however, hold in the case of an irreducible hernia. The straining and powerful voluntary contractions of abdominal muscles which occur during the second stage of labour, also are liable to act prejudicially upon a recent wound. Would not the considerations point to the conclusion that whilst an irreducible hernia should be operated upon during pregnancy, a reducible one should be left alone until the pregnancy has terminated?

The statistical table on page 166 is a matter for sincere congratulation.

The more difficult and obscure subject of femoral hernia is next entered upon. The anatomy of its radical cure

is described more clearly than in any account we have previously read. The procedure recommended for closing the hernial aperture is the author's own operation of suturing Hey's ligament to Cooper's. The remaining chapters of the book deal with ventral and umbilical hernia, and the radical cure of hydrocele and varicocele.

The radical cure of hernia has, of recent years, become one of the most frequently performed of surgical operations, and Mr. Lockwood has rendered the medical profession a service in publishing a manual so practical in character and so graphic in detail as the volume before us.

The book is essentially a record of personal experience and observation; it contains a minimum of theory and a maximum of fact, and the facts given are of such a kind as will prove most useful to the surgeon.

Any work from the author's pen we expect to be a model in clearness of diction, carefulness of expression, and in accuracy. These three qualities are possessed in a high degree by this work. But we confess to a rather unholy joy when we find Mr. Lockwood tripping in such expressions as "The presence of blood-clot within the abdomen causes pain by setting up *a kind of* chronic peritonitis;" and, "it (*i. e.* the size of the testicle) certainly did not alter so long as the youth was under observation; on the contrary *it seemed to grow a little bigger.*"

SANATORIA FOR CONSUMPTIVES, by F. RUFENACHT WALTERS, M.D., M.R.C.P. (London: Swan, Sonnenschein and Co. 10s. 6d. net.)

This is an extremely useful work, dealing in detail with all the consumptive sanatoria of any size or importance in France, Germany, Norway, Russia, Switzerland, the United States, and British Colonies. For reasons which the author lamentingly states in his preface, but a few pages are necessary for such institutions existing in England, for England is practically destitute of any suitable provision for consumptive patients of the middle class. The English sanatoria consist of three small institutions, together capable of receiving twenty patients only. Others are, it is true, in course of erection, but these are still upon the same small scale. Dr. Walters makes an eloquent appeal for more home accommodation in this respect, and his remarks are given additional weight by an introduction to his book contributed by Sir Richard Douglas Powell. The last-mentioned authority points out, amongst other advantages, that "lessons in self-management are learned by those who sojourn for a time in such sanatoria; habits of self-discipline and attention to hygienic laws are acquired which are of much importance to those afflicted with consumption, and which have a favourable influence upon prophylaxis; and these persons when they pass again into the general community become centres of instruction in domestic hygiene."

More important even than these advantages seems to us to be the fact that so many middle-class patients either cannot afford to seek their sanatorium treatment abroad, or refuse to leave their friends and country for a possible cure a thousand miles away from them. Now that there is a reaction against advising every patient condemned to phthisis to fly abroad for treatment, and it is found that even in England and Scotland suitable places exist for the purpose, some enterprise in the matter of building sanatoria would probably reap its reward. We fear that the mere advantages gained by the uninfected community will not act as a stimulus here more than in other directions. The efforts of the Society for the Prevention of Tuberculosis, however, might well act along this line among others.

Many useful hints are given in the book as to the choice of a suitable sanatorium, and the description of the various institutions, with their advantages and disadvantages, will make the work of great assistance to consultants and others needing such help in advising their consumptive patients.

POSOLOGICAL TABLES, ETC., by WM. CRAIG, M.D, C.M., F.R.S.E. (Edinburgh: E. and S. Livingstone, 1s. net.)

This is a useful work, so far as the table of doses is concerned, and the appendix on poisons and their antidotes can be recommended. But the indexes of diseases with their most important remedies are useless, if not positively dangerous. We quote one extract:—

CANCER: *Locally*—Hemlock, poppy heads, permanganate of potassium, carbolic acid, belladonna, opium, chlorinated soda lotion.

Internally—Opiates.

Therapeutics do not lend themselves to this form of treatment in tables, and the sooner students realise this the sooner publishers will cease to supply what we must regard as an undesirable article.

Correspondence.

To the Editor of the St. Bartholomew's Hospital Journal.

NEW ZEALAND EXPERIENCES.

SIR,—You were kind enough, Mr. Editor—or was it your predecessor?—to express a wish that I would give the readers of your JOURNAL—our JOURNAL—an account of my experiences in New Zealand. I am afraid that New Zealand experiences are quite as commonplace and uninteresting as those that occur in general practice in England. Besides, I am like Uriah Heep, such a very 'umble individual that it hardly seems worth trying to record anything. However, I can only do my best, and therefore send you the results of my observations in tabular form, suited for gentlemen preparing for their examinations:—

	Times.
Been to see people	1350
Been asked what was the matter	4000
Told	50
Did not know	2000
Romanced about it	1950
Major operations	0
Minor operations	25
Successful	25
Had acute arthritis following dysentery	1
Want to have it again	0
Asked out to tea, &c., in order to get free advice	9
Went	0
Going again	0
Given chloroform	7
Going to give it again	0
Given ether	27
Given valuable advice	1350
Been thanked for it	12
Asked to consultation	15
Advice taken	0
Gave to South Sea Missions	5/-
Gave for a dog	£1
Cash in hand	0

Yours, &c.,
F. W. GALE.

Kaikoura, New Zealand.

To the Editor of the St. Bartholomew's Hospital Journal.

POST-GRADUATE STUDY.

SIR,—Will you permit me to make a few comments on your temperate—and for the most part—fair article on post-graduate tuition?

Besides that which you cite as the only objection to mixing graduates and undergraduates together for purposes of instruction, there are others. And, so far from being prejudices likely to die, as you say, a natural death, they are real and reasonable objections which are intensified by actual experience of post-graduate tuition.

The post-graduate has no objection to "rubbing shoulders" with the undergraduate, but, when meeting him in an ordinary medical school, courtesy and a sense of justice compel the medical man to stand behind the student, in other words, often to see and learn

nothing himself. This objection is insuperable, and one analogous to it has compelled us, at the West London, to reluctantly refuse to admit any more ladies to the general post-graduate classes. We found the ladies modestly unwilling to press to the front, and the gentlemen equally resolved to "behave as sich." I hope you would not regard this as a "prejudice" for which a speedy "natural death" was desirable.

Secondly, post-graduate tuition is essentially different from undergraduate. It should be far less dogmatic and more conversational, more deferential, and less influenced by the examinations which dominate undergraduate teaching.

You may be correct, at least in some instances, in suggesting that the teachers at a special post-graduate school would be less experienced in general tuition than, *e. g.*, the staff of St. Bartholomew's; but what is wanted is *special* experience. Dr. Darley Hartley, of Cape Town, a very able man of large experience as a post-graduate, recently described two members of the staff of one of the London hospitals which has no school, "As having mastered, more than anyone else he had met, the art of utilising the out-patient department for post-graduate teaching."

And now, on the other hand, I would ask you, Have not the staff of a great school like St. Bartholomew's quite enough to do without doubling their duties by undertaking post-graduate tuition?

In a general hospital with an active and zealous staff the material furnished by 150 beds is, for practical purposes, no more limited than in a hospital of 700 beds. The fewer the beds the more careful are the staff about the cases they admit into them. In these days in an active London hospital of 150 beds, on an average thirty operations are performed per week in the theatre. What post-graduate with surgical inclinations can find time and energy to watch more? Further, he has often opportunities of assisting, and can nearly always find a place in the circle next the operator. He does not require an astronomical telescope to make out whether the field of operation is the pharynx or the pelvis.

The hospital in which I have gained that practical experience of post-graduate tuition which emboldens me to address you on the subject is the West London. The staff on the surgical side, including the ophthalmic surgeon, the three house surgeons, and the four anæsthetists, numbers fourteen. Ten of these fourteen are St. Bartholomew's men. If, therefore, your JOURNAL exists, as I believe it does, in the interests of the students past and present of St. Bartholomew's, the West London Post-Graduate School has no small claim on you for justice, or even for sympathy and support.

I remain, Sir, your obedient servant,

C. B. KEETLEY,
Surgeon to the West London Hospital; formerly Assistant Demonstrator of Anatomy at St. Bartholomew's.

To the Editor of the St. Bartholomew's Hospital Journal.

SOME COMPLICATIONS FOLLOWING ABDOMINAL OPERATIONS.

SIR,—I have read with great interest in the ST. BARTHOLOMEW'S HOSPITAL JOURNAL of February last the paper by Mr. Williamson on "Some Complications following Abdominal Operations." Like him, I have had a large number of laparotomies under my care. I have a firm belief in the efficiency of intra-venous saline injections, to which I am in the habit of adding 1 oz. of brandy and 5 minims of liq. strychninæ. Where the abdomen is not drained (and every year drainage is employed less), it has been in some cases filled with hot saline solution, thus converting the peritoneal cavity for the time being into an internal hot-water bag. This fluid is not of much immediate use to the patient for circulatory purposes, and may, therefore, have to be supplemented by intra-venous injection. If the peritoneum is filled with saline solution it cannot secrete any large amount into its cavity, which in one case appeared to be the immediate cause of death in a patient a few hours after operation for a ruptured tubal pregnancy. The woman was fairly well after the operation, but at the end of four hours she collapsed and died. I opened the abdomen at once, to satisfy myself that there was no hæmorrhage, and found the peritoneum distended with quarts of peritoneal fluid. Filling the abdomen with saline solution possibly also tends to prevent adhesions. The injection of warm water *per rectum* as a "thirst enema" is most useful. I have a strong suspicion that many of the so-called "nutrient enemata" act largely by supplying the patient with fluid. Another advantage of supplying the patient with large quantities of fluid is that it stimulates renal secretion, and so enables the patient, if infected, to excrete large doses of poison. I have recently operated on a ruptured tubal pregnancy in which the extravasated blood was infected, probably from the rectum. I filled the peritoneum with 5½ pints of hot saline solution, and injected 8½ pints with 1 oz. of brandy intravenously. The patient excreted large quantities of urine, and was thus saved from a fatal septicæmia.

With Mr. Williamson, the more abdominal cases I see the more am I convinced of the importance of the pulse as a danger-signal. It is not easy to convince nurses that a rising pulse, with a temperature slightly raised or even falling, is a cause for any anxiety. Morphia, by relieving pain and slowing the pulse, masks but does not prevent the poisoning process, which the surgeon is then apt to appreciate too late. I am, yours faithfully,

C. HAMILTON WHITEFORD.

5, Sussex Terrace, Plymouth.

To the Editor of the St. Bartholomew's Hospital Journal.

ABERNETHIAN SOCIETY'S ELECTIONS.

SIR,—Many of those who listened to the farewell speech of the outgoing President of the Abernethian Society, at the Annual General Meeting, must have been glad that for once the custom of mere compliment was departed from. The reform of the franchise is certainly urgently needed at this Society's elections. It is to be feared that he advocated a counsel of perfection in suggesting that no one should be entitled to vote who has not attended some of the meetings during the session. But the last election brings out one of the absurdities of the present system very vividly. The average attendance during the session was 44, yet the votes recorded at the election of officers was 321! This means that those who are really interested in the Society can play little part in the choice of their own officers.—Yours, &c.,

ABERNETHIAN.

Appointments.

BELDING, D. T., L.R.C.P.Lond., M.R.C.S., has been reappointed Medical Officer of Health by the East Dereham Urban District Council.

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CORBEN, CHARLES, L.R.C.P.Lond., M.R.C.S., has been appointed Public Vaccinator for the Caldicott District by the Chepstow Board of Guardians.

* * *

DODSON, G. E., M.R.C.S., L.R.C.P., appointed House Surgeon to the Norfolk and Norwich Hospital.

* * *

O'SULLIVAN, H. D., M.B., B.C.(Cantab.), appointed Assistant House Surgeon to the Wolverhampton and Staffordshire General Hospital.

* * *

ROWLAND, P. W., M.B.(Lond.), M.R.C.S, L.R.C.P., appointed House Surgeon to the Out-patients at the Children's Hospital, Great Ormond Street.

* * *

VAUGHAN, H. LL., M.R.C.S., L.R.C.P., appointed Assistant House Surgeon to the County Hospital, Guildford.

Birth.

FURNIVALL.—On March 18th, at 39, Welbeck Street, W., the wife of Percy Furnivall, of a daughter.

ACKNOWLEDGMENTS.—*Middlesex Hospital Gazette, St. Thomas's Hospital Gazette, Nursing Record, Guy's Hospital Gazette, London Hospital Gazette, Charing Cross Hospital Gazette, The Student, St. Mary's Hospital Gazette.*